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मानक

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IS 3524-1 (1982): Threaded Taper Pins, Part I: With Internal Threads [PGD 31: Bolts, Nuts and Fasteners Accessories]



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Bhartrhari—Nitiśatakam

“Knowledge is such a treasure which cannot be stolen”

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Indian Standard

SPECIFICATION FOR
THREADED TAPER PINS

PART I WITH INTERNAL THREADS

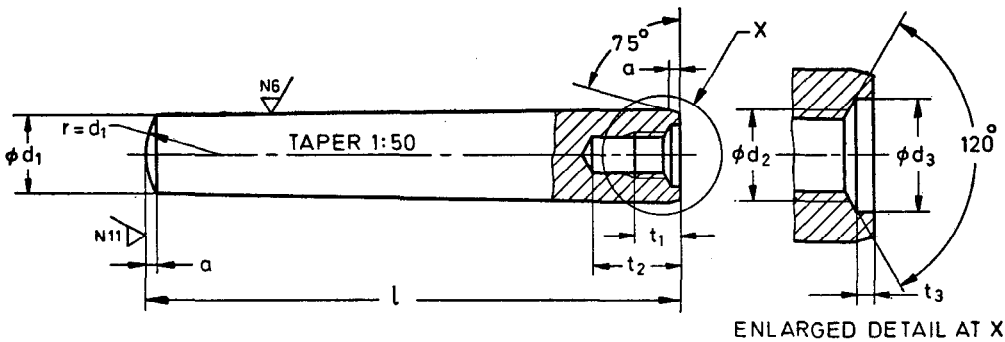
(First Revision)

- 1. Scope** — Covers the requirements of threaded taper pins with internal threads in the diameter range 6 to 50 mm.
- 2. Dimensions and Tolerances**
- 2.1** The dimensions and tolerances for internal threaded taper pins shall be as given in Table 1.
- 2.2** The preferred length-diameter combinations for internal threaded taper pins are given in Table 2.
- 2.3** The taper on the diameter of the taper pins shall be 1 : 50. The cone angle tolerance shall be AT8 for internal threaded taper pins (see IS : 7615-1975 System of cone tolerances).
- 2.4** Screw threads on internal threaded taper pins shall conform to tolerance class 6H of IS : 4218 (Part IV)-1976 'Specification for ISO metric screw threads : Part IV Tolerancing system (first revision)'.
- 3. Material** — Threaded taper pins shall be manufactured from steel with minimum tensile strength of 500 N/mm² such as C30 of IS : 5517-1978 'Specification for steels for hardening and tempering (first revision)' or free cutting steels conforming to IS : 4431-1978 'Specification for carbon and carbon-manganese free-cutting steel (first revision)'.

TABLE 1 DIMENSIONS AND TOLERANCES FOR INTERNAL THREADED TAPER PINS

(Clauses 2.1 and 5)

All dimensions in millimetres



ENLARGED DETAIL AT X

Nom. Diameter d_1 h10	6	8	10	12	14	16	20	25	30	40	50
$a \approx$	0.8	1	1.2	1.6	1.6	2	2.5	3	4	5	6.3
d_2	M4	M5	M6	M8	M8	M10	M12	M16	M20	M20	M24
d_3	4.3	5.3	6.4	8.4	8.4	10.5	13	17	21	21	25
t_1	6	8	10	12	12	16	18	24	30	30	36
t_2 Min	10	12	16	20	20	25	27	34	42	42	50
t_3	1	1.2	1.2	1.2	1.2	1.5	1.5	2	2	2	2.5

TABLE 2 PREFERRED LENGTH-DIAMETER COMBINATIONS FOR INTERNAL THREADED TAPER PINS

(Clause 2.2)

All dimensions in millimetres.

NOMINAL LENGTH $l \geq 15$	NOMINAL DIAMETER d_1										
	6	8	10	12	14	16	20	25	30	40	50
16											
20											
24											
28											
32											
36											
40											
45											
50											
55											
60											
70											
80											
90											
100											
110											
120											
130											
140											
150											
165											
180											
200											
230											
260											

Note — Preferred lengths are between the stepped lines.

4. Designation — Threaded taper pins shall be designated by name, nominal diameter, nominal length and number of standard.

Example:

An internal threaded taper pin of nominal diameter, $d_1 = 12$ mm and nominal length $l = 80$ mm shall be designated as:

Internal Threaded Taper Pin 12 × 80 IS : 3524

5. Workmanship and Finish — Threaded taper pins shall be free from burrs, scales and tool marks. The surface finish of the various faces shall be as shown in figure in Table 1.

6. Sampling and Acceptance Criteria — Unless otherwise agreed to between the purchaser and the manufacturer, the method of sampling and acceptance criteria shall be in accordance with IS : 2614-1969 'Methods for sampling of fasteners (first revision)' except the major and minor defects (see 6.1) and acceptable quality levels (AQL) (see 6.2).

6.1 The major and minor defects shall be as given below:

Major Defect	Minor Defect
Nominal diameter, d_1	Nominal length, l
Taper	Thread length, t_1
Thread limits	Surface finish

6.2 The AQL values for testing for defectives and defects shall be as given below:

	AQL Values-Percent	
	Testing for Defects	Testing for Defectives
Major defect	1	1.5
Minor defect	1.5	4

7. General Requirements — As given in IS : 1367 (Part I)-1980 ' Technical supply conditions for threaded steel fasteners: Part I Introduction and general information (*first revision*) '.

7.1 For extraction of internal threaded taper pins, it is recommended that screws of property class 10.9 are used.

8. Packing — As given in IS : 1367 (Part XVIII)-1979 ' Technical supply conditions for threaded steel fasteners: Part XVIII Marking and mode of delivery (*first revision*) '.

9. ISI Certification Marking — Details available with the Indian Standards Institution.

EXPLANATORY NOTE

Threaded taper pins are used in application where frequent dismounting of the joined parts is required. The pins are threaded internal to provide easy withdrawal.

The standard was first published in 1966. The following major changes have been made in the present revision:

a) Standard has been split into two parts:

- Part I Threaded taper pins with internal threads
- Part II Threaded taper pins with external threads

b) Material clause has been modified to permit free-cutting steels with improved machinability.

c) Tolerance on the screw threads have been modified to align with IS: 4218-1976 ' Specification for ISO metric screw threads '.

d) Tolerance on nominal length has been modified to js15.

e) For acceptance criteria, major and minor defects have been redefined and AQL values incorporated. AQL values are separately given for testing for defects and defectives. Thus either testing for individual defects or defectives (the latter only distinguishes between good and defective pieces regardless of the various possible defects) is necessary depending on the use to which the pins are put to. Both methods of acceptance on the basis of defect or defective pieces are therefore included as option. There is no clear-cut statistical connection between the AQL values for individual defects and AQL values for defective pieces.

f) For taper tolerance, the concept of cone angle tolerance has been introduced as covered in IS : 7615-1975 ' System of cone tolerances '.

Cylindrical pins with internal threads are covered in IS : 10248-1982.

In the preparation of the standard, assistance has been derived from DIN 7977-1977 Kegelstifte mit Gewindezapfen und konstante Zapfenlängen (Taper pins with thread and constant threaded part) and DIN 7978-1977 Kegelstifte mit Innengewinde (Taper pins with internal thread) issued by Deutsches Institut für Normung.